

We claim:

1. In a pressurized water reactor having at least one high-pressure pump for liquid primary coolant, an apparatus for admitting <sup>H</sup>gas into the liquid primary coolant with hydrogen, comprising:
  - a) a suction line leading to the at least one high-pressure pump;
  - b) an admission point for feeding the hydrogen into said suction line;
  - c) a hydrogen admission line leading to said admission point;
  - d) a control device having an inlet side and an outlet side;
  - e) a pressure line connected to the high-pressure pump;
  - f) a measurement line branching off from said pressure line downstream of the at least one high-pressure pump;
  - g) a measuring device incorporated into said measurement line and connected to said inlet side of said control device for measuring hydrogen concentration; and

h) a control valve disposed in said hydrogen admission line and connected to said outlet side of said control device.

2. The apparatus according to claim 1, including a volume <sup>control tank</sup> ~~equalization vessel~~, said measurement line leading into said <sup>control tank</sup> ~~volume equalization vessel~~.

3. The apparatus according to claim 1, including a dewatering system, said measurement line leading into said dewatering system.

4. The apparatus according to claim 1, wherein the at least one high-pressure pump admits the primary coolant extracted from a coolant loop back into the coolant loop.

5. The apparatus according to claim 1, including a hydrogen supply, said control valve disposed in said hydrogen admission line between said hydrogen supply and said admission point.

6. The apparatus according to claim 1, including a mixer disposed in said suction line.

7. The apparatus according to claim 6, wherein said mixer is disposed downstream of said admission point.

8. The apparatus according to claim 1, including a volume  
~~equalization vessel~~ <sup>control tank</sup>, and a bypass line associated with said  
~~volume equalization vessel~~ <sup>control tank</sup> and having a valve.

9. The apparatus according to claim 8, wherein said bypass line discharges upstream of said admission point into said suction line between said volume ~~equalization vessel~~ <sup>control tank</sup> and the at least one high-pressure pump.

10. The apparatus according to claim 1, wherein said control device is a proportional controller.

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